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FOREST INSECT SURVEY

San Bernardino National Forest
December 1952

APPRAISAL SURVEY



Introduction

An aerial appraisal survey was conducted on the Arrowhead-Crestline infestation area of the San Bernardino National Forest during the second week of December, 1952. Bureau personnel participating were G. L. Downing and R. E. Stevens; assistance was given by F. D. Newcombe, Ass't. Ranger, Arrowhead ranger station. Flying, which amounted to 9 1/2 hours and occupied parts of 3 days, was done with a rented Cessna 170-B aircraft flown by Cal Ferris, Forest Service pilot from the Region V office in San Francisco.

The purpose of the survey was to obtain an estimate of the number of trees needing control in the infestation area, and to obtain additional information relative to control boundaries.

Survey Technique

The area to be surveyed, a total of about 50,000 acres, was laid out on 1"=1 mile USGS topographic quadrangle sheets, and flight lines were drawn in 1 mile apart. Flight lines and boundaries are illustrated on the accompanying map. In flight, all pine fades were tallied in a 1/2 mile strip along either side of the flight line, and in this manner, 100% coverage was obtained. Lines were each flown twice, in opposite directions. A correction factor between fades tallied and actual number of infested trees was obtained by comparison of completed spotting records and the aerial count for the limited area already covered by spotting.

Insect and Host Species

Several insect species are currently active in the Arrowhead region. Heavy group killing of ponderosa pine and Coulter pine is being caused by the western pine beetle, Dendroctonus brevicornis Lec. and, to a very limited extent, similar damage to Jeffrey pine is being inflicted by the Jeffrey pine beetle, D. jeffreyi Hopk. Loss from pine engraver beetles, Ips spp. appears to be very light.

In addition to the pine loss, true firs in this area, as throughout the state this year, are being heavily attacked by fir engraver beetles, Scolytus spp. Inasmuch as no effective way is known to control the fir engraver beetles, consideration at the present time is confined to the pine beetles.

Status and Scope of Infestation

This infestation is one of relatively long standing that has for the past 3 years been aggressive and has resulted in the loss of many very valuable trees. The 1951-52 control project covered around 15,000 acres, and resulted in the treatment of around 1000 infested trees. The pine stand is predominately virgin.

Ownership is divided among Forest Service, State and private lands.

Resource Value and Industry Dependence

Situated as it is near the heavily-populated areas of Southern California, the Arrowhead-Crestline region of the San Bernardino National Forest sustains intensive recreational use. Values involved are difficult to estimate in terms of dollars and cents; however, available use figures indicate that 2,885,000 persons visit the area annually and there are 8,685 summer homes and 112 hotels or resorts in the region. Several small communities depend entirely upon vacation trade for their incomes.

Results and Recommendations

Fades were tallied over the entire area; a total of 11140 were counted on the proposed 1952-53 control area. The spotting part of the control project has started at the time of the time of the aerial survey, and approximately 500 trees had already been spotted. The aerial count of red-tops on this area was 355. Applying this ratio to the aerial count over the total area, an estimate of about 1600 trees for the entire project was made.

Approximately 15,000 acres were covered in the 1951-52 control project. The aerial observations and subsequent ground checks show that the infestation is now very light on certain parts of this area; Cedar Springs, L. Gregory-Crestline and Running Springs. However, the infestation remains heavy in the vicinity of Lake Arrowhead. Because of fund limitations during the past two control projects, infested areas contiguous with the control area have been left untreated. Red-tops are strikingly abundant in the vicinity of the Little Bear Creek burn, in the region north of the ridge line north of the lake, and in the timbered areas around Grass Valley. Spot ground checks indicated that loss levels at least as high as in the control area are being maintained in these untreated areas. Uncontrolled, these areas undoubtedly serve as centers for re-infestation and to a degree nullify control efforts.



In order to reduce this problem as much as possible, it is recommended that an additional 4,000 acres, as indicated on the accompanying map, be included in this year's control project. This involves working north to the brush line north of the lake, working the fire area, and the Grass Valley country.

It is estimated that there are around 1600 infested trees in the total proposed control area. This is subject to an expected error of 25%, which indicated that the minimum number could be 1200 and the maximum 2000 trees. At a cost of approximately \$20 per tree, the average for the 1951-52 project, around \$32,000 is needed to adequately carry out the necessary control work.

Forest Insect Laboratory
Berkeley 4, California
January 19, 1953

Robert E. Stevens
Entomologist

ARROWHEAD INFESTATION AREA

- Flight Lines
-  Proposed '53 Control Boundary Addition
-  '51-'52 Control Boundary

T.3N.

T.2N.

T.1N.

R.4W.

R.3W.

R.2W.

FIELD 8/1/33

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